

### **Remarks**

This is in response to the Advisory Action dated June 3, 2004 and the Final Office Action dated December 16, 2003. Applicant previously filed a Notice of Appeal for this case, which was apparently entered by the Office on March 18, 2004. Applicant is filing this amendment together with a Request for Continued Examination (RCE). Claim 3 has been amended to address an informality. New dependent claims 27-28 have been added. Claims 1, 5, 7, 9-15, 17-18 and 24-26 have been previously canceled without prejudice. Claims 2-4, 6, 8, 16, 19-23 and 27-28 are currently pending. Reexamination and reconsideration are respectfully requested.

Applicant has amended claim 3 to address an informality. Specifically, a comma was added after the term "device" on line 1. The scope of claim 3 was not narrowed by the amendment.

The Examiner indicated in the Advisory Action that claims 2-4, 6, 8, 16 and 19-23 are rejected. These claims were rejected in the Final Office Action over U.S. Patent No. 6,262,446 to Koo et al., either alone or in combination with U.S. Patent No. 6,110,772 to Takada et al.

As indicated in the Final Office Action, claim 2 was rejected as unpatentable over Koo et al. (US 6,262,446). The rejection is respectfully traversed. The Examiner stated on page 3 of the Final Office Action that Koo teaches "forming a word line and a connection layer between the lower electrode and a separate element (Fig. 4 (16e) and Col. 7, lines: 10-20)." It appears that the Examiner considers reference number 16e of Koo to be a "lower electrode" as recited in claim 2.

However, while Koo refers to 16e as a "lower electrode pattern," it is clear from Fig. 4 that reference number 16e is not part of a capacitor, because it has no dielectric layer and upper electrode layer on it. Thus 16e is not a "lower electrode of the second capacitor" as recited in claim 2. Applicant notes that the Examiner in the Final Office Action on page 3, line 3, did not refer to reference number 16e as a lower electrode but instead referred to other reference numbers as lower electrodes of capacitors.

In addition, Koo shows in Fig. 4 and expressly states that "the psuedo-capacitors 21, 22 and 23 are also formed at the peripheral region, they are not electrically connected to an underlying contact plug. Therefore, these capacitor patterns 21, 22 and 23 do not serve as capacitors." Koo at Col. 6, lines 3-6. Furthermore, the capacitor patterns 21, 22 and 23 do not appear to have their lower electrodes (16f, 16h, 16i) electrically connected to any other component.

Thus, the Examiner's citations to Koo do not describe or suggest a method including "simultaneously forming a word line that is a component of the DRAM and a connection layer that is located in a common layer of the word line and that electrically connects the lower electrode to another element in the semiconductor device" as recited in claim 2.

In the Advisory Action, the Examiner stated that "1) it is implicit in the reference that more than one capacitor is formed in the cell array region where the capacitors formed are functional" and "2) claim language is given its broadest reasonable interpretation and therefore the term "capacitor" as used by the Applicant is broad enough to include pseudo capacitors . . . "

Applicant does not agree with the Examiner's Advisory Action statements.

First, the Examiner's characterization of claim 2 is not accurate. Claim 2 recites in part "(a) simultaneously forming a storage node of the first capacitor and a lower electrode of the second capacitor" and "before the step (a), the step of simultaneously forming a word line that is a component of the DRAM and a connection layer that is located in a common layer of the word line and that electrically connects the lower electrode to another element in the semiconductor device." The Examiner's citations to the art do not appear to describe or suggest the various features recited in claim 2.

Second, the term "capacitor" as recited in the claim includes a "first capacitor" having a "storage node", a "dielectric layer" and a "cell plate"; and a "second capacitor" having a "lower electrode," a "dielectric layer," and an "upper electrode." The term "psuedo capacitor" as used in Koo does not include the features recited in claim 2. Accordingly, applicant respectfully submits that the Examiner's statements regarding the interpretation of "capacitor" should be withdrawn.

For at least the above reasons, the rejection of claim 2 should be withdrawn. Claim 16 was rejected in the Final Office Action in a similar manner as claim 2. Applicant respectfully submits that for at least the same reasons as claim 2, the rejection of claim 16 should be withdrawn.

Claim 20 depends from claim 19, which is discussed below. Applicant respectfully submits that the rejection of claim 20 should be withdrawn for at least the same reasons as claim 16 as discussed below.

Claims 3 was rejected in the Final Office Action as unpatentable over Koo in view of U.S. Patent No. 6,110,772 to Takada et al. ("Takada"). The rejection is respectfully traversed.

Applicant respectfully submits that the Examiner's rejection of claim 3 is deficient. The Examiner stated on page 4 of the Final Office Action that Takada teaches "forming a first resistance element and a second resistance element in the analog region by ion implantation (Fig. 14 (resistance element) and Col. 7, lines 30-40), wherein the first element is doped more than the second (Col. 8, lines 15-30). Applicant notes that Fig. 14 of Takada and the portions cited by the Examiner do not appear to describe "(d) forming a first resistance element and a second resistance element in the analog element region" as recited in claim 3. Instead, it appears that Takada as cited by the Examiner only describes one resistance element.

In the Advisory Action, the Examiner cited Takada at col. 9, lines 65-67. The "first resistance element electrode" and "second resistance element electrode" of Takada do not anticipate the language of claim 3 ("first resistance element" and "second resistance element") because as seen in Takada Fig. 20, the first resistance element electrode and second resistance element electrode referred to by Takada are electrodes connected to the same resistance element.

Furthermore, applicant notes that the Examiner's citations to the art do not appear to describe or suggest that "the first element is doped more than the second," as recited in claim 3.

Dependent claims 4, 6 and 8 each depend from claim 2. Applicant respectfully submits that the Examiner's citations to Takada do not overcome the deficiencies of the rejection of claim 2 over Koo as explained above. Thus, the rejection of claims 4, 6 and 8 should be withdrawn for at least similar reasons as explained above for claim 2. In addition, applicant respectfully submits that Takada as cited by the Examiner does not describe or suggest method including "(d) forming a first resistance element and a second resistance element in the analog element region", and "the step (d) is carried out simultaneously with step (c)" as recited in claims 4, 6 and 8. Furthermore, the Examiner's citations to the art do not appear to describe or suggest methods in which "a resistance value of the first resistance element is lower than a resistance value of the second resistance element" as recited in claims 4 and 6. In addition, applicant notes that the portion of Takada cited by the Examiner (col. 8, lines 15-30) does not appear to describe forming a silicide layer as recited in claim 8.

For at least the above reasons, applicant respectfully submits that the rejection of claims 3, 4, 6 and 8 should be withdrawn.

With respect to claim 19, applicant respectfully submits that the Examiner cited no

portion of the art that describes or suggests a method "wherein the etching a portion of the second conducting layer also forms a first resistance element and a second resistance element in the analog element region." as recited in claim 19. Accordingly, the rejection should be withdrawn.

Claim 21 depends from claim 20, which depends from claim 19. Applicant respectfully submits that claim 21 is patentable over the cited art for at least the same reasons as claim 19.


Claims 22-23 depend from claim 19 and are patentable over the cited art for at least the same reasons as claim 19.

New dependent claims 27-28 have been added. Support for these claims may be found in throughout the specification and Figures, for example, at page 25 and Fig. 21. It is believed that no new matter has been entered. Examination of these claims is respectfully requested.

The Examiner made various comments in the Advisory Action and the Final Office Action concerning the non-patentability of certain features of the present invention. Applicant respectfully disagrees. In addition, the Examiner's comments in the Advisory Action and the Final Office Action that have not been discussed above are deemed moot at this time in view of this response.

Applicant respectfully submits that the pending claims are in condition for allowance. Reexamination and reconsideration are respectfully requested. If, for any reason, the application is not in condition for allowance, the Examiner requested to telephone the undersigned to discuss the steps necessary to place the application into condition for allowance.

Respectfully submitted,



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June 18, 2004  
(Date)